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(Geo-Tech & Road Materials Testing Laboratory)

#B9-601, GANGA, Jnanabharathi Enclave,
Valagerahalli, Mysore Road, Bangalore 560059
Ph: 9448853634, 8762194386
Email: sapiencebangalore@gmail.com

Job No.: SCE/BBMP/HB/17/2020-2021

Date: 24.05.2021

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client	: **Executive Engineer,** RR Nagar Division,BBMP, Bangalore.
Agency	: **Sri. H B Rajendra,** Contractor, Bangalore.
Name of the work	Comprehensive development of Roads and Drains in Ward no 17 Rajarajeshwari Nagara Assembly Constituency Under PACKAGE - 2019-20 RRN-DIV(03), BBMP, Bangalore.
Sample ID	: Cement Concrete
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
Technical Reference	: IS: 516-1959 (Reaffirmed 2008)
Grade of Concrete	: M_{15}
Compressive Strength as on	: 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	26.04.2021	24.05.2021	8.071	385.4	17.13
2	26.04.2021	24.05.2021	8.084	376.2	16.72
3	26.04.2021	24.05.2021	8.098	361.9	16.08

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Valagerahalli, Mysore Road, Bangalore 560059
Ph: 9448853634, 8762194386.
Email: sapiencebangalore@gmail.com

Job No.: SCE/BBMP/HB/17/2020-2021

Date: 03.05.2021

PRECAST SLAB 100mm Thick(CORE) TEST REPORT

Client	:	**Executive Engineer,** RR Nagar Division,BBMP, Bangalore.
Contractor	:	**Sri. H B Rajendra,** Contractor, Bangalore.
Name of Work	:	Comprehensive development of Roads and Drains in Ward no 17 Rajarajeshwari Nagara Assembly Constituency Under PACKAGE - 2019-20-RRN-DIV(03), BBMP, Bangalore.
No.of Sample Tested	:	03
Date of Testing	:	03.05.2021
Techinical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M_{20}

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	81.00	0.368	2313.84	1.62	0.959	33.60	17.11	18.48	17.72	22.15
2	50.00	83.00	0.381	2337.85	1.66	0.963	32.10	16.35	17.66	17.01	21.26
3	50.00	86.00	0.402	2380.66	1.72	0.970	34.30	17.47	18.87	18.30	22.87

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Email: sapiencebangalore@gmail.com

No: SCE/BBMP/HB/17/2020-2021

Date: 03.05.2021

KERB STONE (CORE) TEST REPORT

Client	:	**Executive Engineer,** RR Nagar Division,BBMP, Bangalore.
Agency	:	**Sri. H B Rajendra,** Contractor, Bangalore.
Name of Work	:	Comprehensive development of Roads and Drains in Ward no 17 Rajarajeshwari Nagara Assembly Constituency Under PACKAGE - 2019-20-RRN-DIV(03), BBMP, Bangalore.
No.of Sample Tested	:	3
Date of Testing	:	03.05.2021
Techinical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M_{15}

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	81.00	0.369	2320.13	1.62	0.959	24.50	12.48	13.48	12.92	16.15
2	50.00	84.00	0.388	2352.46	1.68	0.965	25.60	13.04	14.08	13.59	16.99
3	50.00	87.00	0.409	2394.28	1.74	0.972	26.40	13.45	14.52	14.11	17.64

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Valagerahalli, Mysore Road, Bangalore 560059
Ph: 9448853634, 8762194386.
Email: sapiencebangalore@gmail.com

Job No.: SCE/BBMP/HB/17/2020-2021

Date 12.04.2021

TEST REPORT ON SOLID CONCRETE BLOCKS

Client	**Executive Engineer,** RR Nagar Division,BBMP, Bangalore.
Agency	**Sri. H B Rajendra,** Contractor, Bangalore.
Name of the Work	Comprehensive development of Roads and Drains in Ward no 17 Rajarajeshwari Nagara Assembly Constituency Under PACKAGE - 2019-20-RRN DIV(03), BBMP, Bangalore.
Date of Testing	12.04.2021
Size of Blocks	: 400mm x 200mm x 200mm
Cross Sectional Area	: 80000 mm^2
Technical Reference	: IS: 2185 (Part 1) - 2005
No. of Blocks Tested	: 04

Sl.No.	Block ID	Wt. in Kg	Failure load (KN)	Compressive strength (N/mm^2)	Block Density in Kg/M^3	Requirement as per IS 2185 (Part 1) - 2005
1	Block 1	31.5	295.6	3.70	1968.75	Minimum required Compressive Strength of Individual Units 3.5N/mm^2
2	Block 2	33.2	301.2	3.77	2075.00	
3	Block 3	31.8	305.2	3.82	1987.50	
4	Block 4	32.5	312.5	3.91	2031.25	

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#B9-003, GANGA, Jnanabharathi Enclave,
Valagerahalli, Mysore Road, Bangalore 560059
Ph: 9448853634, 8762194386.
Email: sapiencebangalore@gmail.com

JobNo: SCE/BBMP/HB/17/2020-2021

Date : 13.05.2021

GRADATION FOR GSB (Grading V)

Client : **Executive Engineer,** RR Nagar Division,BBMP, Bangalore.
Agency : **Sri. H B Rajendra,** Contractor, Bangalore.
Name of work Comprehensive development of Roads and Drains in Ward no 17 Rajarajeshwari Nagara Assembly Constituency Under PACKAGE - 2019-20-RRN-DIV(03), BBMP, Bangalore.

BIS Code : IS 2386 Part (1):1963
: IS 2720 part (5):1985
Date of Testing 11.05.2021 to 13.05.2021

TABLE – 1

Oven Dry Wt (gm) : 13000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirements as per MORTH 5th edition table 400.1
75	0	0	0.00	100	100
53	721	721	5.55	94.45	80-100
26.5	3068	3789	29.15	70.85	55-90
9.5	3528	7317	56.28	43.72	35-65
4.75	1695	9012	69.32	30.68	25-50
2.36	3127	12139	93.38	6.62	10-20
0.85	234	12373	95.18	4.82	2-10
0.425	228	12601	96.93	3.07	0-5

Table 2

Sl. No.	Particulars	Test Results	Requirements as per MORTH 5th edition table 400.2
1	Liquid Limit, %	19.00	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Remarks: Satisfies MORTH Specifications as per Table 400-1, Grading V

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Valagerahalli, Mysore Road, Bangalore 560059
Ph: 9448853634, 8762194386.
Email: sapiencebangalore@gmail.com

JobNo: SCE/BBMP/HB/17/2020-2021

Date : 13.05.2021

GRADATION FOR GSB (Grading V)

Client : **Executive Engineer,** RR Nagar Division,BBMP, Bangalore.
Agency : **Sri. H B Rajendra,** Contractor, Bangalore.
Name of work Comprehensive development of Roads and Drains in Ward no 17 Rajarajeshwari Nagara Assembly Constituency Under PACKAGE - 2019-20-RRN-DIV(03), BBMP, Bangalore.

BIS Code : IS 2386 Part (1):1963
: IS 2720 part (5):1985
Date of Testing 11.05.2021 to 13.05.2021

TABLE – 1

Oven Dry Wt (gm) : 13000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirements as per MORTH 5th edition table 400.1
75	0	0	0.00	100	100
53	612	612	4.71	95.29	80-100
26.5	2355	2967	22.82	77.18	55-90
9.5	2289	5256	40.43	59.57	35-65
4.75	1658	6914	53.18	46.82	25-50
2.36	3781	10695	82.27	17.73	10-20
0.85	1629	12324	94.80	5.20	2-10
0.425	352	12676	97.51	2.49	0-5

Table 2

Sl. No.	Particulars	Test Results	Requirements as per MORTH 5th edition table 400.2
1	Liquid Limit, %	21.50	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Remarks: Satisfies MORTH Specifications as per Table 400-1, Grading V

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JobNo: SCE/BBMP/HB/17/2020-2021

Date : 13.05.2021

GRADATION FOR GSB (Grading V)

Client : **Executive Engineer,** RR Nagar Division,BBMP, Bangalore.

Agency : **Sri. H B Rajendra,** Contractor, Bangalore.

Name of work Comprehensive development of Roads and Drains in Ward no 17 Rajarajeshwari Nagara Assembly Constituency Under PACKAGE - 2019-20-RRN-DIV(03), BBMP, Bangalore.

BIS Code : IS 2386 Part (1):1963
: IS 2720 part (5):1985

Date of Testing 11.05.2021 to 13.05.2021

TABLE – 1

Oven Dry Wt (gm) : 13000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirements as per MORTH 5th edition table 400.1
75	0	0	0.00	100	100
53	607	607	4.67	95.33	80-100
26.5	2439	3046	23.43	76.57	55-90
9.5	2137	5183	39.87	60.13	35-65
4.75	1686	6869	52.84	47.16	25-50
2.36	3979	10848	83.45	16.55	10-20
0.85	1662	12510	96.23	3.77	2-10
0.425	184	12694	97.65	2.35	0-5

Table 2

Sl. No.	Particulars	Test Results	Requirements as per MORTH 5th edition table 400.2
1	Liquid Limit, %	22.00	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Remarks: Satisfies MORTH Specifications as per Table 400-1, Grading V

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Email: sapiencebangalore@gmail.com

Job No.: SCE/BBMP/HB/17/2020-2021

Date : : 22.05.2021

GRADATION FOR WMM

Client : **Executive Engineer,** RR Nagar Division,BBMP, Bangalore.
Agency : **Sri. H B Rajendra,** Contractor, Bangalore.
Name of Work Comprehensive development of Roads and Drains in Ward no 17 Rajarajeshwari Nagara Assembly Constituency Under PACKAGE - 2019-20-RRN-DIV(03), BBMP, Bangalore.
IS Code: : IS 2386 (Part 1):1963(RA 2011)
Date of Testing : 22.05.2021
Material Type : Wet Mix Macadam

Oven Dry.Wt, grar 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
53	0	0	0	100	100
45	236	236	2.4	97.6	95-100
22.4	2631	2867	28.7	71.3	60-80
11.2	2297	5164	51.6	48.4	40-60
4.75	1538	6702	67.0	33.0	25-40
2.36	1284	7986	79.9	20.1	15-30
0.600	595	8581	85.8	14.2	8-22
0.075	1134	9715	97.2	2.8	0-5

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Job No.: SCE/BBMP/HB/17/2020-2021

Date : : 22.05.2021

GRADATION FOR WMM

Client : **Executive Engineer,** RR Nagar Division,BBMP, Bangalore.
Agency : **Sri. H B Rajendra,** Contractor, Bangalore.
Name of Work Comprehensive development of Roads and Drains in Ward no 17 Rajarajeshwari Nagara Assembly Constituency Under PACKAGE - 2019-20-RRN-DIV(03), BBMP, Bangalore.
IS Code: : IS 2386 (Part 1):1963(RA 2011)
Date of Testing : 22.05.2021
Material Type : Wet Mix Macadam

Oven Dry.Wt, grar 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
53	0	0	0	100	100
45	241	241	2.4	97.6	95-100
22.4	2486	2727	27.3	72.7	60-80
11.2	2265	4992	49.9	50.1	40-60
4.75	1632	6624	66.2	33.8	25-40
2.36	1278	7902	79.0	21.0	15-30
0.600	543	8445	84.5	15.6	8-22
0.075	1198	9643	96.4	3.6	0-5

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Name of Work Comprehensive development of Roads and Drains in Ward no 17 Rajarajeshwari Nagara Assembly Constituency Under PACKAGE - 2019-20-RRN-DIV(03), BBMP, Bangalore.
IS Code: : IS 2386 (Part 1):1963(RA 2011)
Date of Testing : 22.05.2021
Material Type : Wet Mix Macadam

Oven Dry.Wt, grar 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
53	0	0	0	100	100
45	216	216	2.2	97.8	95-100
22.4	2537	2753	27.5	72.5	60-80
11.2	2198	4951	49.5	50.5	40-60
4.75	1683	6634	66.3	33.7	25-40
2.36	1144	7778	77.8	22.2	15-30
0.600	505	8283	82.8	17.2	8-22
0.075	1267	9550	95.5	4.5	0-5

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#B9-003, GANGA, Jnanabharathi Enclave,
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Job No.: SCE/BBMP/HB/17/2020-2021

Date : : 22.05.2021

GRADATION FOR WMM

Client : **Executive Engineer,** RR Nagar Division,BBMP, Bangalore.
Agency : **Sri. H B Rajendra,** Contractor, Bangalore.
Name of Work : Comprehensive development of Roads and Drains in Ward no 17 Rajarajeshwari Nagara Assembly Constituency Under PACKAGE - 2019-20-RRN-DIV(03), BBMP, Bangalore.
IS Code: : IS 2386 (Part 1):1963(RA 2011)
Date of Testing : 22.05.2021
Material Type : Wet Mix Macadam

Oven Dry.Wt, grar 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
53	0	0	0	100	100
45	251	251	2.5	97.5	95-100
22.4	2612	2863	28.6	71.4	60-80
11.2	2291	5154	51.5	48.5	40-60
4.75	1634	6788	67.9	32.1	25-40
2.36	1289	8077	80.8	19.2	15-30
0.600	521	8598	86.0	14.0	8-22
0.075	953	9551	95.5	4.5	0-5

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#B9-003, GANGA, Jnanabharathi Enclave,
Valagerahalli, Mysore Road, Bangalore 560059
Ph: 9448853634, 8762194386.
Email: sapiencebangalore@gmail.com

Job No.: SCE/BBMP/HB/17/2020-2021

Date : : 22.05.2021

GRADATION FOR WMM

Client : **Executive Engineer,** RR Nagar Division,BBMP, Bangalore.
Agency : **Sri. H B Rajendra,** Contractor, Bangalore.
Name of Work : Comprehensive development of Roads and Drains in Ward no 17 Rajarajeshwari Nagara Assembly Constituency Under PACKAGE - 2019-20-RRN-DIV(03), BBMP, Bangalore.
IS Code: : IS 2386 (Part 1):1963(RA 2011)
Date of Testing : 22.05.2021
Material Type : Wet Mix Macadam

Oven Dry.Wt, grat 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
53	0	0	0	100	100
45	228	228	2.3	97.7	95-100
22.4	2411	2639	26.4	73.6	60-80
11.2	2312	4951	49.5	50.5	40-60
4.75	1627	6578	65.8	34.2	25-40
2.36	1248	7826	78.3	21.7	15-30
0.600	621	8447	84.5	15.5	8-22
0.075	1324	9771	97.7	2.3	0-5

Note:

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2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
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ಯಶವಂತಪುರ ಉಪ ವಿಭಾಗ
ಜಿಬಿಪಿಕ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

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Priya
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IS Code: : IS 2386 (Part 1):1963(RA 2011)
Date of Testing : 22.05.2021
Material Type : Wet Mix Macadam

Oven Dry.Wt, grar 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
53	0	0	0	100	100
45	219	219	2.2	97.8	95-100
22.4	2658	2877	28.8	71.2	60-80
11.2	2307	5184	51.8	48.2	40-60
4.75	1527	6711	67.1	32.9	25-40
2.36	1684	8395	84.0	16.1	15-30
0.600	529	8924	89.2	10.8	8-22
0.075	762	9686	96.9	3.1	0-5

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Date: 22.05.2021

Aggregate Impact Value

Client	**: Executive Engineer,** RR Nagar Division,BBMP, Bangalore.
Agency	**: Sri. H B Rajendra,** Contractor, Bangalore.
Name of the Work	Comprehensive development of Roads and Drains in Ward no 17 Rajarajeshwari Nagara Assembly Constituency Under PACKAGE - 2019-20-RRN-DIV(03), BBMP, Bangalore.
IS Code	IS 2386 (Part 4):1963(RA 2011)
Type of Mix	Wet Mix macadam
Date of Testing	22.05.2021

Sl No.	Details	Test No. 1	Test No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	386	388	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	85	83	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	301	305	
4	Aggregate Impact value = percent fines 100* (W_2/W_1)%	22.02	21.39	**21.71**

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%(As per MORTH Specication table 400.12)

Note:

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Aggregate Impact Value

Client	**: Executive Engineer,** RR Nagar Division,BBMP, Bangalore.
Agency	**: Sri. H B Rajendra,** Contractor, Bangalore.
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IS Code	IS 2386 (Part 4):1963(RA 2011)
Type of Mix	Wet Mix macadam
Date of Testing	22.05.2021

Sl No.	Details	Test No. 1	Test No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	385	385	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	82	84	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	303	301	
4	Aggregate Impact value = percent fines 100* (W_2/W_1)%	21.30	21.82	**21.56**

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%(As per MORTH Specication table 400.12)

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Job No.: SCE/BBMP/HB/17/2020-2021

Date : 22.05.2021

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	: **Executive Engineer,** RR Nagar Division,BBMP, Bangalore.
Agency	: **Sri. H B Rajendra,** Contractor, Bangalore.
Name of Work	Comprehensive development of Roads and Drains in Ward no 17 Rajarajeshwari Nagara Assembly Constituency Under PACKAGE - 2019-20-RRN-DIV(03), BBMP, Bangalore.
BIS code:	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	22.05.2021

Sl no	Test	1	2	Requirements as per MORTH 5th edition table no 400.12
1	Flakiness Index %	10.8	10.5	Combined Flakiness & Elongation index Max 35%
2	Elongation Index %	11.6	11.7	
	Combined Flakiness & Elongation index	22.40	22.20	

Note:

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